

In the Claims:

Kindly amend the claims as follows:

Claims 2, 5 and 22 are cancelled without prejudice.

Kindly add claims 36-38.

1. (currently amended) Apparatus for dispensing material produced by a chemical reaction between a first chemical reagent and a second chemical reagent, comprising:

injection means configured to produce a jet of said first chemical reagent and a jet of said second chemical reagent such that said jets collide to produce said material;

a storage chamber arranged to provide temporary storage space for the material, said storage chamber having an inlet for receiving said material, ~~and~~ an outlet for dispensing the material and a dispensing piston configured to dispense said material from said storage chamber;

position sending means configured to provide a measure of the position of said dispensing piston along said storage chamber; and

a closing device moveable between a first position in which the material is prevented from passing through said outlet while allowing material to be received into the storage chamber through the inlet and a second position in which the material is allowed to be dispensed through said outlet.

2. (cancelled)

3. (currently amended) Apparatus according to claim ~~2~~ 1, wherein said apparatus has control means configured to control the rate at which said dispensing piston dispenses said material.

4. (currently amended) Apparatus according to claim ~~2~~ 1, wherein said apparatus has control means configured to control the movement of said dispensing piston such that defined portions of the stored material are dispensed.

5. (cancelled)

6. (currently amended) Apparatus according to ~~any of claims 2 to 5~~ claim 1, wherein said dispensing piston for dispensing said material has: a first surface acted upon by hydraulic fluid; and a second surface acting upon said material which is smaller than said first surface, whereby the pressure applied to said material is larger than the hydraulic pressure applied to said piston.

7. (original) Apparatus according to claim 6, wherein said second surface is less than half of the area of the first surface.

8. (currently amended) Apparatus according to ~~any of claims 2 to 7~~ claim 1, wherein said storage chamber has a wall defining a plurality of orifices and said dispensing piston is configured to extrude built-up reacted material through said orifices.

9. (original) Apparatus according to claim 8, wherein said orifices are configured to be blocked by a layer of

solidified material while fluid material is dispensed through said outlet.

10. (original) Apparatus according to claim 9, wherein a portion of said layer is regularly extruded during dispensing operations.

11. (original) Apparatus according to claim 8, wherein said orifices are defined in a wall having a plurality of raised edges to assist extrusion through said orifices.

12. (original) Apparatus according to claim 8, wherein said orifices are defined in a wall having a cooling means for cooling material within said chamber.

13. (currently amended) Apparatus according to ~~any of claims 1 to 12~~ claim 1, wherein said closing device is a rod having an end which is moveable into said outlet to provide said first position and which is retractable into said storage chamber to provide said second position.

14. (currently amended) Apparatus according to ~~any of claims 1 to 13~~ claim 1, wherein said material is produced intermittently at a first rate, and said material is dispensed at a second different rate.

15. (original) Apparatus according to claim 14, wherein said first rate is higher than the second rate.

16. (currently amended) Apparatus according to ~~any of claims 1 to 15~~ claim 1, wherein said dispensed material is polyurethane produced by reacting a diol as the first chemical reagent with a diisocyanate as the second chemical reagent.

17. (currently amended) Apparatus according to ~~any of claims 1 to 16~~ claim 1, wherein said apparatus is configured to locate said closing device in said first position during material production, and subsequently locate said closing device in said second position during dispensing.

18. (currently amended) Apparatus according to ~~any of claims 1 to 16~~ claim 1, wherein said apparatus has:

a first mode of operation in which it is configured to locate said closing device in said first position during material production, and subsequently locate said closing device in said second position during dispensing; and

a second mode of operation in which said apparatus is configured to locate said closing device in said second position during production of said material, such that material is dispensed during production.

19. (currently amended) Apparatus according to ~~any of claims 1 to 18~~ claim 1, including input interface means for receiving command instructions from a programmable control system.

20. (currently amended) Apparatus according to ~~any of claims 1 to 19~~ claim 1, wherein said injection means are arranged such that said jets collide in a production chamber having a piston for controlling said reaction, and said material is received at said storage chamber from said production chamber via a passage which is closeable by a third piston.

21. (currently amended) A method of dispensing material produced by a chemical reaction between a first chemical reagent and a second chemical reagent, said method comprising the steps of:

injecting a jet of said first chemical reagent and a jet of said second chemical reagent such that said jets collide to produce said material;

temporarily storing the material in a chamber having an inlet for receiving said material, and an outlet for dispensing the material; ~~and~~

moving a closing device between a first position in which the material is prevented from passing through said outlet and a second position in which the material is allowed to be dispensed through said outlet;

moving a dispensing piston within said storage chamber to dispense material from said storage chamber through said outlet;
and

sensing the position of the dispensing piston to provide a measure of the position of the piston along the storage chamber.

22. (cancelled)

23. (original) A method according to claim 22, wherein the rate at which said piston dispenses said material is controlled.

24. (original) A method according to claim 22, wherein movement of said piston is controlled such that defined portions of the stored material are dispensed.

25. (currently amended) A method according to ~~any of~~
~~claims 22 to 24~~ claim 21, wherein said piston for dispensing said
material has a first surface acted upon by hydraulic fluid, and a
second surface acting upon said material which is smaller than
said first surface, whereby pressure is applied to said material
which is larger than the hydraulic pressure applied to said
piston.

26. (original) A method according to claim 25, wherein
said second surface is less than half of the area of the first
surface.

27. (currently amended) A method according to ~~any of~~
~~claims 22 to 26~~ claim 1, wherein said storage chamber has a wall
defining a plurality of orifices and said piston is used to
extrude built-up reacted material through said orifices.

28. (original) A method according to claim 27, wherein
said orifices are blocked by a layer of solidified material while
material in a fluid state is dispensed through said outlet.

29. (original) A method according to claim 28, wherein a
portion of said layer is regularly extruded during dispensing
operations.

30. (currently amended) A method according to ~~any of~~
~~claims 21 to 29~~ claim 21, wherein said material is produced at a
first rate, and said material is dispensed at a second different
rate.

31. (original) A method according to claim 30, wherein
said first rate is higher than the second rate.

32. (currently amended) A method according to ~~any of claims 21 to 31~~ claim 21, wherein said dispensed material is polyurethane produced by reacting a diol as the first chemical reagent with a diisocyanate as the second chemical reagent.

33. (currently amended) A method according to ~~any of claims 21 to 32~~ claim 21, wherein said closing device is located in said first position during material production, and said closing device is located in said second position during dispensing.

34. (currently amended) A method according to ~~any of claims 21 to 33~~ claim 21, wherein material is dispensed:

in a first mode of operation by locating said closing device in said first position during material production, and subsequently locating said closing device in said second position during dispensing; and

in a second mode of operation by locating said closing device in said second position during production of said material, such that material is dispensed during production.

35. (currently amended) A method according to ~~any of claims 21 to 34~~ claim 21, in which command instructions are received at an input interface of a programmable control system.

36. (new) Apparatus for dispensing material produced by a chemical reaction between a first chemical reagent and a second chemical reagent, comprising:

injection means configured to produce a jet of said first chemical reagent and a jet of said second chemical reagent such that said jets collide to produce said material;

a storage chamber arranged to provide temporary storage space for the material, said storage chamber having an inlet for receiving said material, an outlet for dispensing the material and a dispensing piston configured to dispense said material from said storage chamber;

a closing device moveable between a first position in which the material is prevented from passing through said outlet while allowing material to be received into the storage chamber through the inlet and a second position in which the material is allowed to be dispensed through said outlet;

wherein said closing device is a rod having an end which is moveable into said outlet of said storage chamber to provide said first position and which is retractable into said storage chamber to provide said second position.

37. (new) Apparatus according to claim 36, wherein said dispensing piston defines a bore, and said rod extends through said bore such that it is moveable with respect to said dispensing piston.

38. (new) Apparatus according to claim 37, wherein said apparatus comprises position sensing means configured to provide a measure of the position of said dispensing piston along said storage chamber.